

CLAIMS

1. A coated metal surface on a solid support, wherein the coating consists of a protein layer firmly attached to the metal surface, and said protein layer is coupled to linker molecules that are bound to low molecular weight antigens, wherein the linker molecules are coupled to the protein layer and are bound to the antigen via functional end groups and contain between the functional end groups an aliphatic hydrocarbon of 1, 2 or 3 carbon atoms, and wherein the antigens are optionally reversibly bound to antibodies specific for the antigens.

2. The coated metal surface on a solid support according to claim 1, wherein the metal is selected from the group consisting of gold, silver, aluminum, chromium and titanium.

3. The coated metal surface on a solid support according to claim 1 or 2, wherein the antigens are the same or different and are bound to the same protein layer or to different patches of protein layers and are selected from the group consisting of optionally derivatized explosives and narcotics.

4. The coated metal surface on a solid support according to claim 3, wherein the explosives are selected from the group consisting of trinitrotoluene (TNT), dinitrotoluene (DNT), hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX), octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazine (HMX), pentaerythritol tetranitrate (PETN), and nitroglycerine (NG).

5. The coated metal surface on a solid support according to claim 3, wherein the narcotics are selected from the group consisting of cocaine, heroine, amphetamine, methamphetamine, cannabiols, tetrahydrocannabiols (THC), and methylenedioxy-N-methylamphetamine (Ecstasy).

6. The coated metal surface on a solid support according to any one of claims 1-5, wherein the solid support is a piezoelectric crystal electrode or a glass plate or prism.

7. Use of the coated metal surface on a solid support according to any one of the claims 1 – 6 as part of an analysis device for detection in an aqueous solution of an analyte antigen with higher affinity to an antibody than the antigen of the coating by monitoring the displacement of the antibody from the coating.

8. A method of detecting analyte antigens in an aqueous solution comprising activating, if necessary, the coated metal surface on a solid support according to any one of claims 1-6 lacking bound antibodies by bringing antigen-specific antibodies into contact with the coated metal surface in an aqueous solution, allowing binding of the antibodies to the antigens of the coating, removing excess antibodies, bringing the aqueous solution possibly containing the analyte antigens that have higher affinity to the antibodies than the antigens of

the coating into contact with the antibodies reversibly bound to the coating, allowing the antibodies to dissociate and react with the analyte antigens, and detecting the loss of mass on the coated metal surface by means of an analysis device.

9. A method according to claim 8, wherein the analysis device is selected from
5 the group consisting of a Piezoelectric Quatz Crystal Microbalance device and a Surface Plasmon Resonance biosensor.

10. The method according to claim 8 or 9, wherein the analysis device
comprises a flow cell in which the coated metal surface on a solid support according to any
one of claims 1-6 is placed.